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SCIENTIFIC NOTE

FIRST CALIFORNIA RECORD FOR *DENDROSOTER PROTUBERANS* (NEES) (HYMENOPTERA: BRACONIDAE)

In June 1978, *Dendrosoter protuberans* (Nees) was reared from bolts of Siberian elm wood (*Ulmus pumila* L.) collected in Los Angeles and San Bernardino Counties, California. This external braconid parasite was also reared from English elm wood (*Ulmus procera* Salisb.) collected in Sacramento County in June 1979. All of the wood from both locations was infested with *Scolytus multistriatus* (Marsham), the smaller European elm bark beetle. *D. protuberans* is a parasite of *S. multistriatus* but had not previously been reported from California.

Dendrosoter protuberans, a native of Russia, Europe and Asia Minor, parasitizes several species of Cerambycidae and many species of Scolytidae in its endemic area (Stary, 1957, Acta Soc. Entomol. Csl., 54:277–292). Among its hosts is *Scolytus multistriatus,* a native European bark beetle. This bark beetle was accidentally introduced into the United States in Massachusetts in 1909 (Chapman, 1910, Psyche, 17:63–68). It spread westward and became established in California in 1951 (Armitage, 1951, Calif. State Dept. Agric. Bull., 40:111–118).

S. multistriatus is of scientific and public interest as it is one of the principal vectors of Dutch elm disease. Since *S. multistriatus* was introduced into the United States, one of the strategies undertaken to control this beetle has been classical biological control. Only a few native North American natural enemies have been reported attacking *S. multistriatus.* Among the many European hymenoptera parasitizing *S. multistriatus, D. protuberans* was found to be a dominant parasite in eastern Austria (Schroeder, 1974, Z. Angew. Entomol., 76:150–159). In 1964, this braconid was introduced to the United States from Avignon, France and released in many states in the East and Midwest (Kennedy, 1980, personal communication; Riedl, 1979, personal communication). Studies of this species demonstrated that it could easily be reared in the laboratory, could overwinter in the Midwest and could reproduce under field conditions (Kennedy, 1970, Ann. Entomol. Soc. Am., 63:351–358). Successful Successful establishment has occurred in many of the release sites investigated, although the numbers of this parasite are limited by the bark thickness of the wood through which it must oviposit (Truchan, 1970, Ph.D. Thesis, Mich. St. Univ., 97 pp.). *D. protuberans* has been reared from two alternate species of bark beetles in Colorado, *Scolytus rugulosus* (Ratzeburg) and *Leperisinus californicus* Essig (Merlino, 1980, personal communication).

The farthest west that *D. protuberans* has been intentionally released is

Colorado. It is not known how long this parasite has been in California, nor how it arrived, but it appears to have become readily established. This species was reared from only three of the eight counties sampled in 1978 and 1979. A program to distribute this parasite throughout California could hasten the spread of the parasite and possibly provide increased control of local populations of *S. multistriatus*.

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